

LODESTONE PACIFIC



SHIELDED COIL FORMS



FORMERLY MICROMETALS CATALOG #2

ISSUE F

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lode-stone/lōd-stōn/n: 1: a rock or meteorite having the magnetic property of attraction. 2: something that strongly attracts.

(714) 630-1343

LODESTONE PACIFIC is both manufacturer and distributor of products and services for the magnetics segment of the electronics industry. The company is structured to offer the highest quality product and service at the lowest total cost, and is committed to substantial inventory that insures competitive advantage through quick shipments and tightly scheduled delivery.

With its affiliation to **Micrometals Inc.**, Lodestone Pacific will manage the continued success of this series of Shielded Coil Forms formerly found in Micrometals Catalog #2. Characterized as high quality, durable, stable and variable winding forms, these products have been used in "Fishfinders to Sidewinders" for over 25 years.

Used primarily in tuned radio frequency applications as RF Filter Inductors, Oscillators, and Narrow and Broad Band RF Transformers, these variable assemblies have been proven extremely reliable in military, aerospace, specialty and consumer electronic applications requiring high Q and durability with temperature and time.

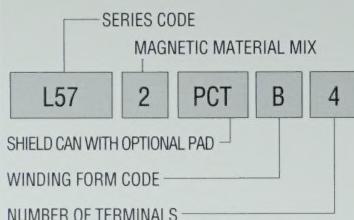


PART NUMBERING SYSTEM

These unwound Shielded Coil Forms offer a specialized magnetic geometry that incorporates tunable inductance with external and internal magnetic shielding.

There are six series of Lodestone Pacific shielded coil form assemblies; L31, L33, L41, L43, L45 and L57. Each series consists of a base or header with terminals, a winding form, a tunable threaded core and a shielding cup both made from a magnetic material, and a metal shield can.

A typical part number consists of five groups of alpha-numeric codes.



Each series offers eight iron powder or ferrite material formulations or mixes engineered to optimize inductance and Q within a specific frequency range. The magnetic material that makes up the tuning core and cup core have a part number which includes the mix number that matches the mix number for an entire assembly part number.

L57-2-CT-B-4 is a L57 series assembly utilizing iron powder mix 2, which is suited for tuned circuit applications from 250 KHz to 10 Mhz.

AVAILABILITY

Lodestone Pacific sells entire assemblies or any of the individual components that are a part of an assembly. Individual components are traditionally in stock as are small quantities of completed assemblies. Moderate and large quantities are produced to order. Samples of components or complete assemblies are available from stock.

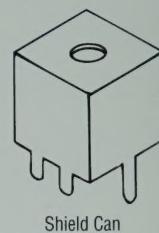
Several configurations of the Micrometals Shielded Coil Forms produced over the last 25 years are not shown in this version of the catalog. The L44, L440, L56, L560, and L59 assemblies or their hardware is still available from Lodestone Pacific by special order.

QUALITY CONTROL

Lodestone Pacific's internal quality control and inspection system follows guidelines found in MIL-I-45208A (USA), ISO 9000 (EC) and MIL-STD-2000. Testing, inspection and research for these product lines is done on a Hewlett Packard 4191A or 4277A LCZ meter for inductance and a Hewlett Packard 4342A and a Boonton 190A for Q.

Solderability of the base terminals and the shield can tabs meets or exceeds the solderability standards found in MIL-STD-202, Method 208. Storage and handling is in accordance with MIL-STD-2000.

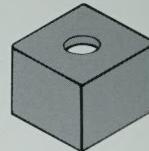
MIX NUMBER	COLOR CODE	MAGNETIC MATERIAL	MATERIAL PERMEABILITY	FREQUENCY RANGE	TEMPERATURE STABILITY
1	BLUE	CARBONYL C	20.0	.15-2.0 MHz	280 ppm/ ^o C
2	RED	CARBONYL E	10.0	.25-10 MHz	95 ppm/ ^o C
3	GRAY	CARBONYL HP	35.0	.02-1.0 MHz	370 ppm/ ^o C
3F	GRAY/ORANGE	HP/FERRITE	80.0	.01-1.0 MHz	700 ppm/ ^o C
6	YELLOW	CARBONYL SF	8.5	2.0-30 MHz	35 ppm/ ^o C
7	WHITE	CARBONYL TH	9.0	1.0-20 MHz	30 ppm/ ^o C
10	BLACK	CARBONYL W	6.0	10-100 MHz	150 ppm/ ^o C
17	LAVENDER	CARBONYL WL	4.0	20-200 MHz	50 ppm/ ^o C
50	ORANGE	FERRITE 61	125.0	.01-1.0 MHz	1500 ppm/ ^o C



Shield Can



Anti-Vibration Pad



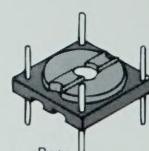
Cup Core



Tuning Core



Winding Form



Base

ASSEMBLY PHYSICAL CHARACTERISTICS

Base and Terminals: The plastic base is thermoset Diallyl Phthalate (DAP) which has a flammability rating of UL94-VO and will tolerate temperatures up to 850°F. The exception is the L41 series which is moulded in a cost effective glass filled nylon material which can tolerate 500°F for a brief period. The terminals in all assemblies are half hard brass or copper wire plated to MIL-T-10727 and tested to MIL-STD 202, Method 208 for solderability.

The high temperature resistance of the DAP material is ideal for using a solder pot and heat-stripping coated magnetic wire to form the winding lead to base termination.

Magnetic Materials: Iron powder offers great repeatability and stability. The inductance tolerances of iron powder is $\pm 2\%$ within a production lot and $\pm 5\%$ from lot to lot. The ferrite materials listed are manufactured to $\pm 10\%$ within a production lot and $\pm 20\%$ from lot to lot. A description of the temperature characteristics for these materials can be found on Page 6, Figures 4 and 5.

The tuning cores of the variable assemblies have shallow threads and driver slots that conform to Metal Powder Industries Federation standards. Each threaded core is coated with Teflon to insure smooth reliable tuning with a torque of between .5 to 2.5 inch/oz. Iron powder and ferrite cores are brittle by nature and the drive slots can be broken when a poor fitting tuning tool is used. Tuning Tool A found on Page 14 or an equivalent is recommended to insure drive slot integrity.

Winding Forms: The coilforms and bobbins are designed to offer several winding options on materials selected for their durability and stability. A description of these winding forms is included on the data sheets for each Shielded Coil Form series found on Pages 7 through 13.

Shield Can: All shield cans are copper for maximum shielding and Q performance. The exception is the L41 series which is made from a more cost effective brass. All shield cans are tin plated to MIL-T-10727 which specifies the plating composition and thickness. The grounding tabs on the shield cans meet MIL-STD 202 Method 208 for solderability.

Anti-vibration Pads: Lodestone Pacific offers an optional silicone rubber pad used in some assemblies to squeeze the components together when crimped into the shield can. These anti-vibration pads will improve the durability of the assemblies in extreme environments.

SHIELDED COIL FORM PERFORMANCE

The quality and characteristics of the magnetic field generated in a variable inductor is determined by the quality and shape of the magnetic core materials, and by the characteristics of the winding.

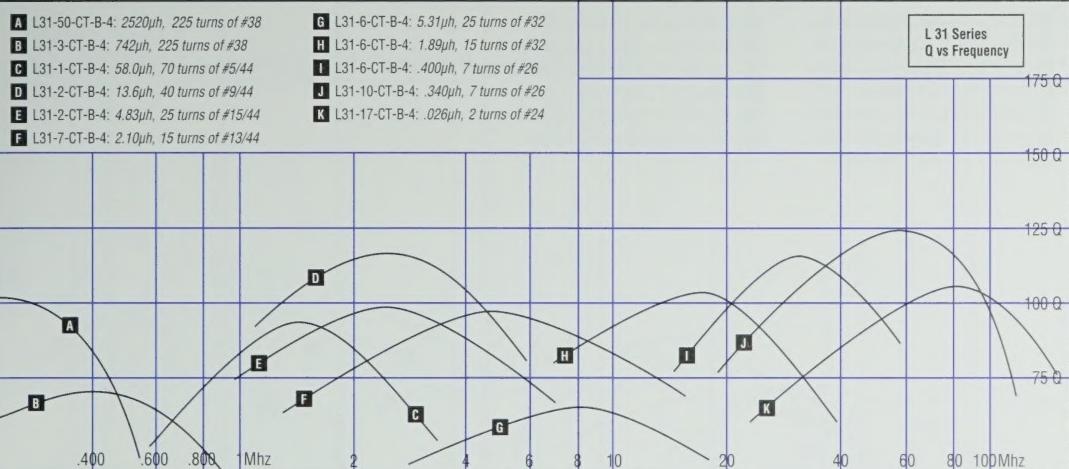
A cylindrical core in the center of a spring wound wire coil form will create a magnetic field with invisible lines of flux represented by Figure 1. The construction of the Shielded Coil Form traps and channels the lines of flux within a magnetic path way increasing the efficiency and performance of the assembly as represented by Figure 2.

The more complete the magnetic pathway along the magnetic lines of flux, the higher the inductance and the quality (Q) of the assembly. The optimum state for a tuned inductor is to have the desired inductance reached when the tuning core fills the gap in the assembly and closes the magnetic field.

The Inductance of the Assembly: The inductance (L) is listed in μh (micro-henries) for 100 turns on the data sheets for each Shielded Coil Form (SCF) assembly. The number of turns of wire required for a desired inductance can be calculated from the following formula.

$$\text{Required turns} = 100 \sqrt{\frac{\text{Desired } L(\mu\text{h})}{L(\mu\text{h}) \text{ for 100 turns}}}$$

The inductance of the assembly is relatively flat with increasing frequency until after the peak of that assembly's Q. Above the peak Q frequency, apparent inductance will climb with frequency until the frequency when self resonance occurs. The inductances shown in this catalog are measured at frequencies below the Q curve's peak frequency.



THE Q OF THE ASSEMBLY

The optimum Q (quality or magnification) of an assembly is found in balancing the fundamental physics of both the core material and the winding. The assembly's contribution to superior Q is found in the core materials shape, inductance and frequency sensitivity. The windings contribution is maximized by minimizing frequency specific wire losses in the winding. The key to optimizing the Q of the assembly is selecting the proper core material, wire and winding characteristics for a particular frequency.

Core Considerations

The iron powder and ferrite materials used in Lodestone Pacific's Shielded Coil Forms are formulated for optimum Q within a specific frequency range as shown by the table on Page 2. Q vs. frequency curves show the highest Q's achievable for a particular core material and frequency.

The shape and magnitude of these curves can be characterized by the following formula:

$$Q = 2\pi fL$$

R

Where f is frequency in MHz, L is inductance in μH and R is the effective series resistance due to both copper and core loss in ohms.

While the frequency and inductance is known or calculated, the frequency sensitive copper and core material losses are often difficult to calculate. In addition, variations in core material density and winding characteristics often make the Q experienced in actual applications differ from theory.

The Q vs frequency curves included in this catalog are plotted on a semi-log axis and were derived from actual testing of the variable assemblies in a parallel resonant circuit and reflect the expected Q readings with a specific inductance and winding. As the frequency is varied, the readings will trace a humped curve identifying the optimum inductance-frequency balance that produces the highest Q. Increasing inductance by adding turns of wire or tuning the core towards the maximum position will create a new Q curve with a peak that will be shifted down in frequency. Conversely, reducing inductance by decreasing turns or de-tuning the assembly will shift the Q curve peak towards a higher frequency.

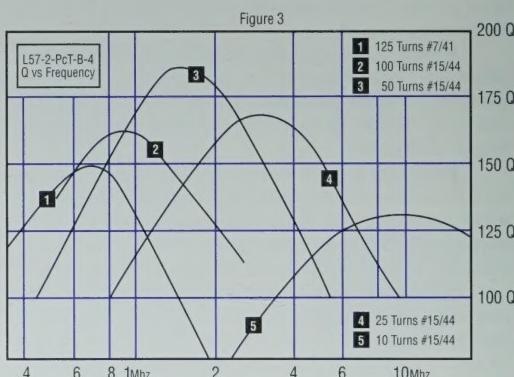
Figure 3 shows the L57-2-PCT-B-4 assembly wound with a decreasing numbers of turns. The family of Q curves show the trend towards higher frequency Q curves as you reduce inductance by reducing turns. It also shows that the maximum value of each Q curve will

diminish as the curve peaks move to the extremes of their recommended frequency ranges. There is an optimum frequency and inductance for a given assembly where the "peak of the peaks" will occur (at 1.5 MHz in Figure 3). This is why applications requiring high Q are best engineered with the inductive portion of the tuned circuit optimized first, and the capacitor specified to support that optimum Q.

Each core material formulation will produce similar families of curves within their optimum frequency ranges. The complete family of Q curves for the L57 series on page 5 show that mix formulations 7 and 6 exhibit better Q characteristics as the frequency moves above formulation 2's optimum frequency range.

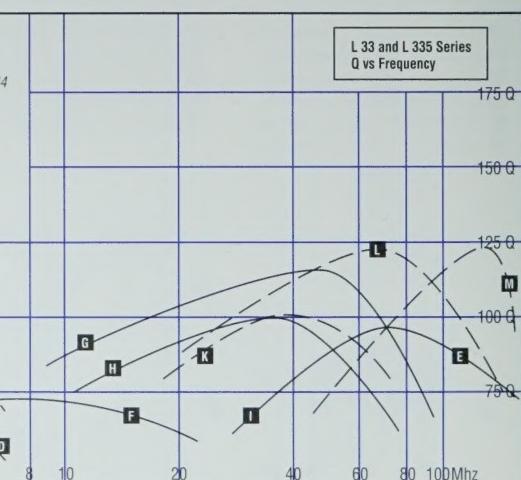
The amount of core material in the assembly will also improve Q. As an example, the L57-2-CT-B-4 wound with 25 turns of 15/44 Litz wire (Page 5) will produce higher Q's than the L45-2-CT-B-4 with the same winding (Page 5). This is due to the 28% more iron powder in the larger L57 shielded assembly. Comparing the L31-2-CT-B-4 (Page 3), L33-2-CT-F-4 (Page 4) and L43-2-CT-F-5 (Page 5) shows the relative Q of these assemblies with 25 turns of 15/44 Litz wire at approximately 2 MHz.

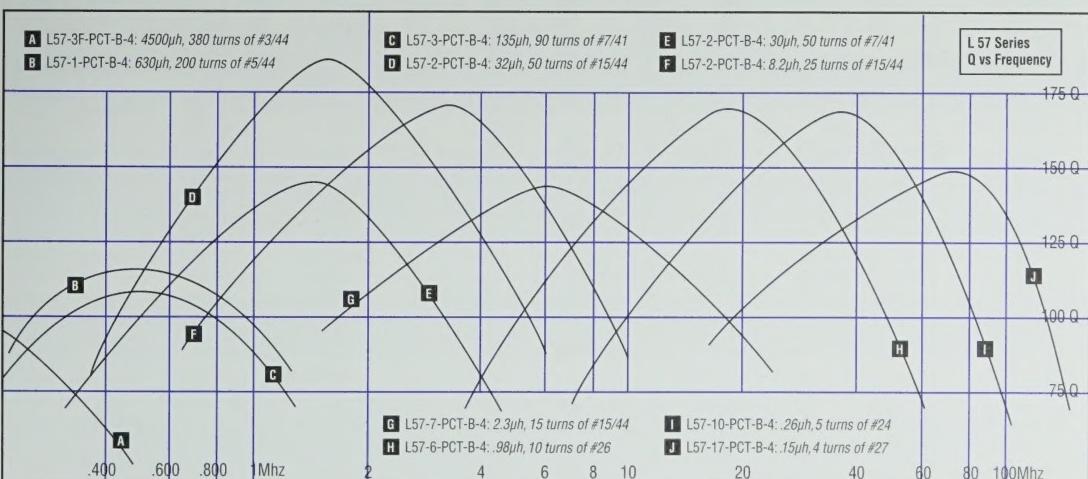
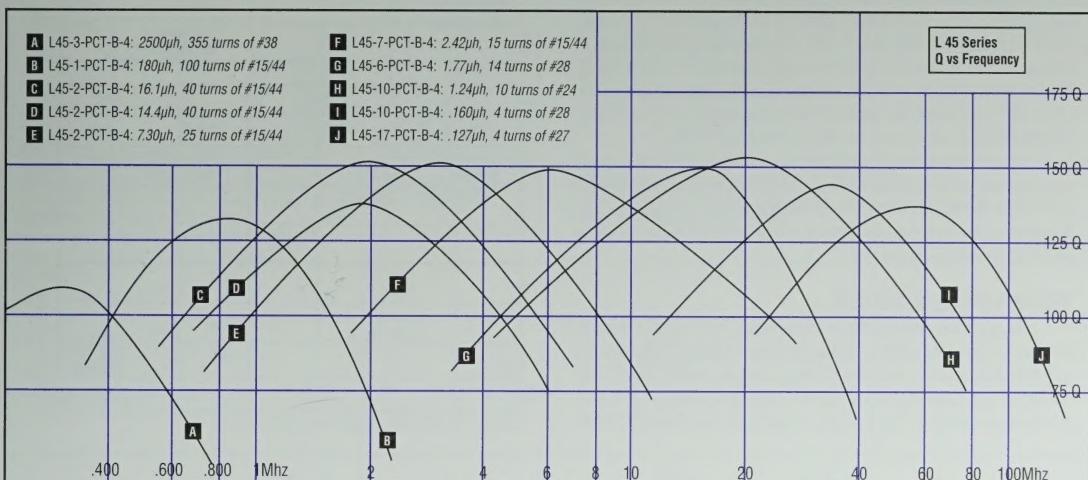
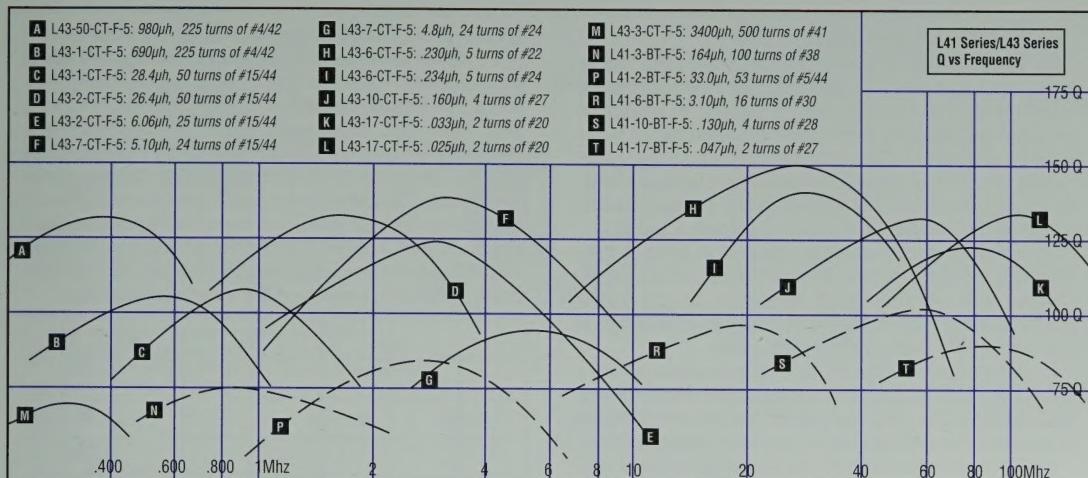
In comparing these curves it can be seen that increasing the amount of core material also shifts the "peak of peaks" down in frequency. As an example, the L57-2-CT-B-4 (4.45 grams of core material) with 25 turns of 15/44 peaks at 1.5 MHZ, while the smaller L33-2-CT-B-4 with the same winding and only .601 grams of core material peaks at 2.3 MHz.



- A L33-3-CT-F-4: 180 μH , 150 turns of #3/44
- B L33-1-CT-F-4: 42.5 μH , 75 turns of #3/44
- C L33-7-CT-F-4: 5.05 μH , 29 turns of #15/44
- D L33-2-CT-F-4: 4.1 μH , 25 turns of #15/44
- E L33-2-CT-F-4: 9.5 μH , 40 turns of #9/44
- F L33-7-CT-F-4: .73 μH , 10 turns of #15/44
- G L33-10-CT-F-4: .29 μH , 7 turns of #26

- H L33-6-CT-F-4: .31 μH , 7 turns of #26
- I L33-17-CT-F-4: .028 μH , 2 turns of #26
- J L335-2-CT-F-4: 2.16 μH , 18 turns of #15/44
- K L335-6-CT-F-4: .24 μH , 6 turns of #26
- L L335-10-CT-F-4: .16 μH , 5 turns of #26
- M L335-17-CT-F-4: .03 μH , 2 turns of #26





Winding Considerations

The type and size of the wire used in the winding is also frequency sensitive. This is due to the losses that result in the electronic and magnetic fields emitted from the wire in the winding. As frequency is increased from 100 KHz to 1Mhz, the resistive eddy-current losses increase and the "skin effect" becomes significant. It is possible to minimize the "skin effect" by dividing the conductor into a bundle of interwoven insulated strands called Litzendraht or Litz wire. The strand diameter is chosen so that the skin effect in the individual strands is negligible.

Litz wire is described as 7/41 (7 strands of 41 AWG), or 15/44 (15 strands of 44 AWG.) and will tend towards larger bundles of smaller strands as frequency is increased. Above 1 Mhz, the advantages of reduced resistance using Litz wire are nullified by the disadvantages of increased capacitive losses created by the stranding.

As the capacitance of adjacent turns as well as the capacitance from the winding to the core becomes significant, stranded wire should be abandoned in favor of heavier solid wire. Thus higher frequency windings will tend towards fewer well spaced turns of larger diameter enamel coated magnetic wire.

The positive influence of Litz wire is demonstrated in the L43 series Q curves on page 5. With the same number of turns and inductance, the L43-7-CT-F-5 with Litz wire has superior Q to the L43-7-CT-F-5 wound with solid wire at approximately 4 Mhz. It is also evident that 50 turns of 15/44 is a more efficient Litz winding than 50 turns of 7/41 on the L57-2-PCT-B-4 tuned to 30 μ H at 1.5 Mhz. As the capacitive effects begin to dominate the Litz wire becomes a liability. The exact frequency is dependent on the application but the practical transition is from 1 to 10 Mhz.

The winding table below shows the number of turns of Litz and magnetic wire of different gauges that will fit in each of the Shielded Coil Form's winding area. These turns estimates are for indication only. The actual maximum number of turns will depend on insulation thickness and the winding technique.

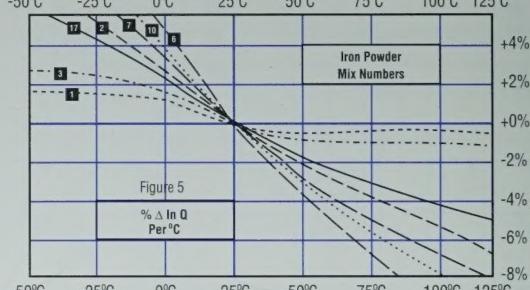
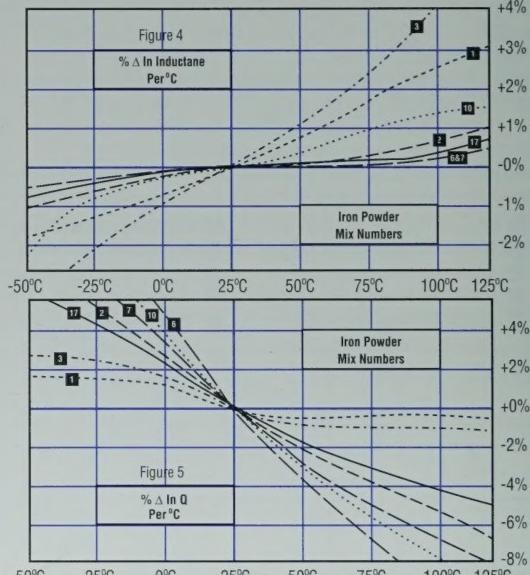
TEMPERATURE STABILITY

An important characteristic of iron powder core materials is the outstanding temperature stability. The temperature stability information for each material is listed in parts-per-million-per degree Celsius (ppm/ $^{\circ}$ C). As an example, the inductance of a 100ppm/ $^{\circ}$ C material will change by 1% over a temperature change of 100 $^{\circ}$ C. Figures 4 and 5 plot the temperature stabil-

ity for iron powder materials as a percentage change in inductance and Q.

The iron powder core materials have excellent long term stability from -65 $^{\circ}$ C (-150 $^{\circ}$ F) up to 125 $^{\circ}$ C (257 $^{\circ}$ F). Inductance will increase gradually and Q will decrease gradually as the core materials move from 25 $^{\circ}$ C to 125 $^{\circ}$ C. Above 125 $^{\circ}$ C, inductance and Q will begin to degrade with time. Ferrite materials are more sensitive to temperature and will exhibit changes in inductance and Q from 5 to 10 times greater than iron powder.

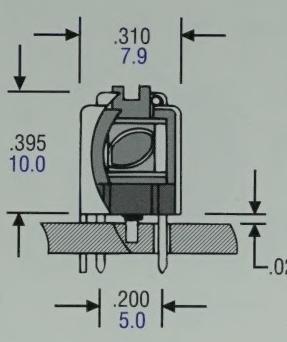
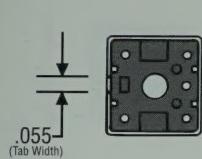
Another characteristic of iron powder is that extended periods of elevated temperature will result in a permanent shift in inductance and Q when the assembly is returned to ambient. For temperature sensitive applications within the recommended temperature range, this shift can be stabilized by "aging" the core material at 125 $^{\circ}$ C for a minimum of 48 hours.



These graphs show relative stability for the core materials alone and should be used only as an indication of the temperature stability of the wound assembly.

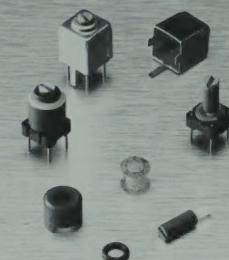
DIA. (INCHES)	.0030	.0037	.0047	.0058	.0072	.0091	.0112	.0140	.0173	.0220	.0270	.0340
SOLID WIRE (AWG)	42	40	38	36	34	32	30	28	26	24	22	20
LITZ WIRE		#7/46	#4/42	#5/44	#10/42	#7/41	#15/44	#15/41				
L31 SERIES												
FIRST LAYER	50	40	31	25	20	16	13	10	8			
FULL WINDING	580	380	235	155	100	63	41	26	16			
L33 SERIES												
FIRST LAYER	48	39	30	25	20	15	12	10	8			
FULL WINDING	510	355	205	135	89	55	36	23	15			
L335 SERIES												
FIRST LAYER	40	33	25	21	17	12	10	8	6			
FULL WINDING	440	305	175	115	75	46	30	18	12			
L41 SERIES												
FIRST LAYER	4	4	4	4	4	4	4	4	4			
FULL WINDING	340	220	135	88	56	36	24	12	4			
L43 SERIES												
FIRST LAYER	95	77	60	49	39	31	25	20	16	13	10	8
FULL WINDING	2060	1350	840	550	350	220	145	94	62	39	25	16
L45 SERIES												
FIRST LAYER	71	58	45	37	29	23	19	15	12	9	7	6
FULL WINDING	1200	780	480	320	200	130	86	55	36	22	14	6
L57 SERIES												
FIRST LAYER	71	58	45	37	29	23	19	15	12	9	7	6
FULL WINDING	2350	1500	960	630	410	250	170	105	71	45	29	18

Inches/mm



The L31 series offers a continuous internal magnetic path and shielding for superior inductance and Q performance in a compact variable assembly with 4 or 5 terminals. The components are designed for excellent durability and stability over time and temperature. These assemblies are supplied un wound. The winding capacity of this series is on page 6. Typical Q vs Frequency curves are on page 3.

L31 SERIES



ASSEMBLY PART NO.	COLOR CODE	MAGNETIC MATERIAL(1)	FREQUENCY RANGE (2)	MATERIAL PERMEABILITY	ASSEMBLY A _u nH/turns ² (3)	MAX. μ H 100 turns	MIN μ H (4) 100 turns	TEMPERATURE STABILITY(5)
L31-1-CT-B-4	BLUE	CARBONYL C	.15-2.0 MHz	20.0	15.0	150	65	280 ppm/ $^{\circ}$ C
L31-2-CT-B-4	RED	CARBONYL E	.25-10 MHz	10.0	10.5	105	64	95 ppm/ $^{\circ}$ C
L31-3-CT-B-4	GREY	CARBONYL HP	.02-1.0 MHz	35.0	17.0	170	68	370 ppm/ $^{\circ}$ C
L31-6-CT-B-4	YELLOW	CARBONYL SF	2.0-50 MHz	8.5	8.5	85	57	35 ppm/ $^{\circ}$ C
L31-7-CT-B-4	WHITE	CARBONYL TH	1.0-20 MHz	9.0	9.5	95	63	30 ppm/ $^{\circ}$ C
L31-10-CT-B-4	BLACK	CARBONYL W	10-100 MHz	6.0	7.0	70	50	150 ppm/ $^{\circ}$ C
L31-17-CT-B-4	LAVENDER	CARBONYL	20-200 MHz	4.0	5.5	55	40	50 ppm/ $^{\circ}$ C
L31-50-CT-B-4	ORANGE	FERRITE 61	.01-1.0 MHz	125	35.0	350	117	1500 ppm/ $^{\circ}$ C

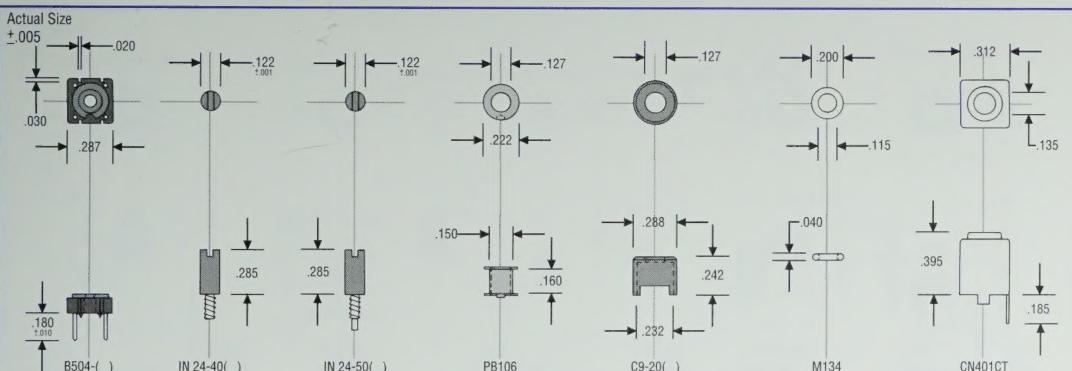
1) The iron powder or ferrite materials are used in a portion of the base, the tuning core and cup core.

2) This represents the frequency range for Q optimization in tuned or resonant circuits. The inductive properties of the material is effective over a considerably wider frequency range.

3) Nanohenries (10^{-9} Henries) per turn squared.

4) The minimum inductance is measured in microhenries (10^{-6} Henries) per 100 turns with the tuning core tuned out of the winding area but still a part of the assembly.

5) The temperature stability is of the magnetic material, measured in parts per million per degree Celsius (ppm/ $^{\circ}$ C) on a toroidal core and winding. This is only an indication of the temperature stability for a complete wound assembly.



4 TERMINAL ASSEMBLY	BASE ONLY (6)	TUNING CORE (7)	BASE ASSEMBLY	COLOR CODE	WINDING BOBBIN (8)	CUP CORE	TORQUE O-RING (9)	SHIELD CAN
L31-1-CT-B-4	B504-1	IN24-4001	L31-1-4	BLUE	PB106	C9-2001	M134	CN401CT
L31-2-CT-B-4	B504-2	IN24-4002	L31-2-4	RED	PB106	C9-2002	M134	CN401CT
L31-3-CT-B-4	B504-3	IN24-4003	L31-3-4	GREY	PB106	C9-2003	M134	CN401CT
L31-6-CT-B-4	B504-6	IN24-4006	L31-6-4	YELLOW	PB106	C9-2006	M134	CN401CT
L31-7-CT-B-4	B504-7	IN24-4007	L31-7-4	WHITE	PB106	C9-2007	M134	CN401CT
L31-10-CT-B-4	B504-10	IN24-4010	L31-10-4	BLACK	PB106	C9-2010	M134	CN401CT
L31-17-CT-B-4	B504-17	IN24-4017	L31-17-4	LAVENDER	PB106	C9-2017	M134	CN401CT
L31-50-CT-B-4	B504-50	IN24-4050	L31-50-4	ORANGE	PB106	C9-2050	M134	CN401CT

5 TERMINAL ASSEMBLY

L31-()-CT-B-5	B505-()	IN24-40()	L31-()-5	SAME	PB106	C9-20()	M134	CN401CT
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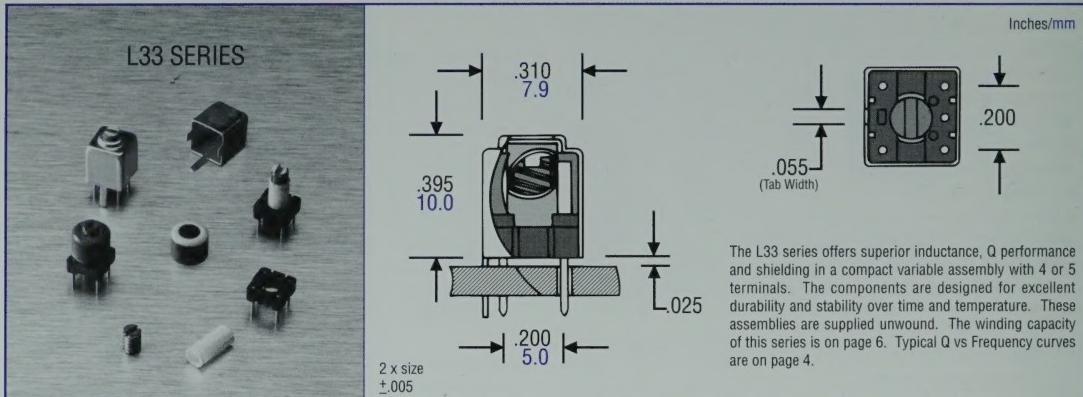
6) The base is moulded from thermoset Diallyl Phthalate (DAP). The 4 or 5 terminals available are

half hard brass, .024 inches in diameter, tin plated to MIL-STD 202 Method 208 for solderability.

7) The tuning cores have a nylon 2-70 threaded insert. IN24-50() is optional tuning core that allows tuning through the bottom of the assembly. Tuning-Tool-A on page 14 is the recommended adjustment tool.

8) The winding bobbin is moulded nylon 6/6.

9) The Torque O-Ring controls tuning torque and protects the assembly from damage and de-tuning during vibration.



L33 SERIES

The photograph shows several L33 series components, including various shielded coil forms and their respective base parts. A technical drawing provides detailed dimensions for the L33-1-CT-F-4 assembly:

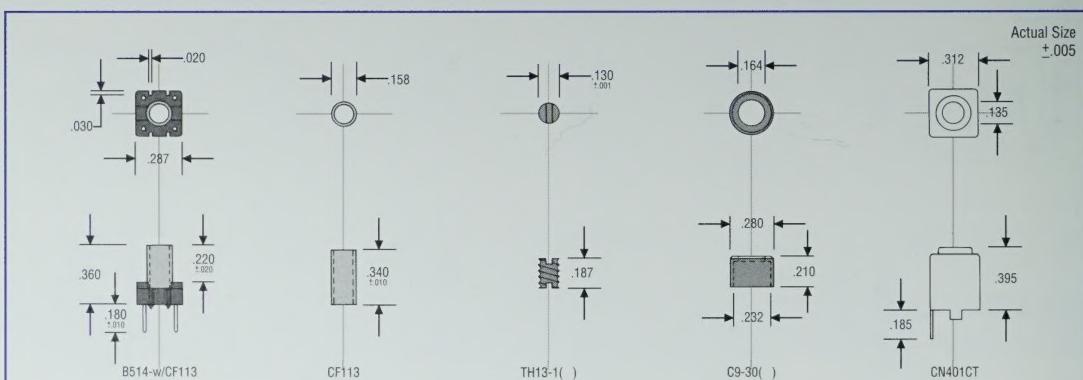
- Overall width: .310 / 7.9 mm
- Base thickness: .025 mm
- Base height: .200 / 5.0 mm
- Base width: .395 / 10.0 mm
- Base thickness (Tab Width): .055 mm
- Base height (Tab Width): .200 mm
- Base height (Tab Width): .055 mm
- Base height (Tab Width): .200 mm

2 x size
+.005

ASSEMBLY PART NO. **COLOR CODE** **MAGNETIC MATERIAL(1)** **FREQUENCY RANGE (2)** **MATERIAL PERMEABILITY** **ASSEMBLY AL nH/turn² (3)** **MAX μ H 100 turns** **MIN μ H (4) 100 turns** **TEMPERATURE STABILITY(5)**

L33-1-CT-F-4	BLUE	CARBONYL C	.15-2.0 MHZ	20.0	7.6	76	45	280 ppm/ $^{\circ}$ C
L33-2-CT-F-4	RED	CARBONYL E	.25-10 MHZ	10.0	6.8	68	45	95 ppm/ $^{\circ}$ C
L33-3-CT-F-4	GREY	CARBONYL HP	.02-1.0 MHZ	35.0	8.0	80	46	370 ppm/ $^{\circ}$ C
L33-6-CT-F-4	YELLOW	CARBONYL SF	2.0-50 MHZ	8.5	6.0	60	38	35 ppm/ $^{\circ}$ C
L33-7-CT-F-4	WHITE	CARBONYL TH	1.0-20 MHZ	9.0	6.4	64	40	30 ppm/ $^{\circ}$ C
L33-10-CT-F-4	BLACK	CARBONYL W	10-100MHZ	6.0	5.4	54	37	150 ppm/ $^{\circ}$ C
L33-17-CT-F-4	LAVENDER	CARBONYL	20-200MHZ	4.0	4.8	48	37	50 ppm/ $^{\circ}$ C
L33-50-CT-F-4	ORANGE	FERRITE 61	.01-1.0MHZ	125.0	9.5	95	48	1500 ppm/ $^{\circ}$ C

1) The iron powder or ferrite materials are used in the tuning core and cup core.
 2) This represents the frequency range for Q optimization in tuned or resonant circuits. The inductive properties of the material is effective over a considerably wider frequency range.
 3) Nanohenries (10^{-9} Henries) per turn squared.
 4) The minimum inductance is measured in microhenries (10^{-6} Henries) per 100 turns with the tuning core tuned out of the winding area but still a part of the assembly.
 5) The temperature stability is of the magnetic material, measured in parts per million per degree Celsius (ppm/ $^{\circ}$ C) on a toroidal core and winding. This is only an indication of the temperature stability for a complete wound assembly.



4 TERMINAL ASSEMBLY

4 TERMINAL ASSEMBLY	BASE ONLY (6)	WINDING FORM (7)	BASE ASSEMBLY	COLOR CODE	THREADED CORE (8)	CUP CORE	SHIELD CAN
L33-1-CT-F-4	B514	CF113	B514-w/CF113	BLUE	TH13-101	C9-3001	CN401CT
L33-2-CT-F-4	B514	CF113	B514-w/CF113	RED	TH13-102	C9-3002	CN401CT
L33-3-CT-F-4	B514	CF113	B514-w/CF113	GREY	TH13-103	C9-3003	CN401CT
L33-6-CT-F-4	B514	CF113	B514-w/CF113	GREY/ORANGE	TH13-106	C9-3006	CN401CT
L33-7-CT-F-4	B514	CF113	B514-w/CF113	YELLOW	TH13-107	C9-3007	CN401CT
L33-10-CT-F-4	B514	CF113	B514-w/CF113	WHITE	TH13-110	C9-3010	CN401CT
L33-17-CT-F-4	B514	CF113	B514-w/CF113	BLACK	TH13-117	C9-3017	CN401CT
L33-50-CT-F-4	B514	CF113	B514-w/CF113	LAVENDER	TH13-150	C9-3050	CN401CT

5 TERMINAL ASSEMBLY

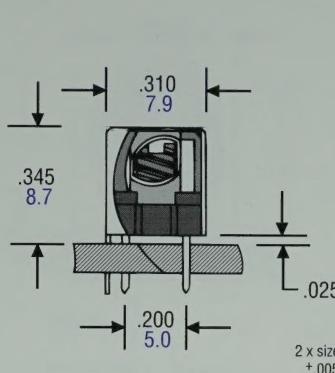
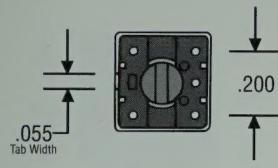
5 TERMINAL ASSEMBLY	BASE ONLY (6)	WINDING FORM (7)	BASE ASSEMBLY	AS ABOVE	TH13-()	C9-30-()	CN401CT
L33-()-CT-F-5	B515	CF113	B515-w/CF113	AS ABOVE	TH13-()	C9-30-()	CN401CT

6) The base is moulded from thermoset Diallyl Phthalate (DAP). The 4 or 5 terminals available are half hard brass, .024 inches in diameter, tin plated to MIL-STD 202 Method 208 for solderability. Optional base B524 is available with .050 standoffs.

7) The coil form is a glass reinforced polyester tube with 6-32 internal threads.

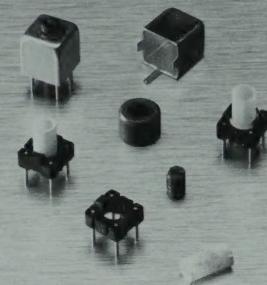
8) The tuning core is 6-32 shallow thread coated with Teflon. Tuning-Tool-A on page 14 is the recommended adjustment tool.

Inches/mm



The L335 series is a shortened version of the L333 series that offers superior inductance, Q performance and shielding in a compact variable assembly with 4 or 5 terminals. The components are designed for excellent durability and stability over time and temperature. These assemblies are supplied un wound. The winding capacity of this series is on page 6. Typical Q vs Frequency curves are on page 4.

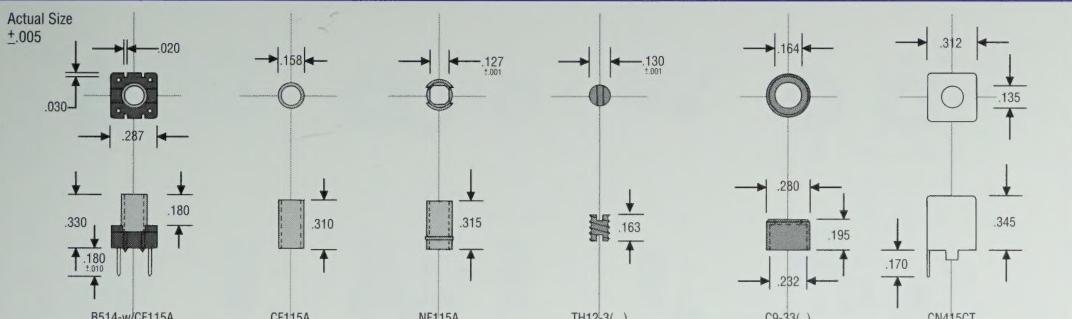
L335 SERIES



ASSEMBLY PART NO.	COLOR CODE	MAGNETIC MATERIAL(1)	FREQUENCY RANGE (2)	MATERIAL PERMEABILITY	ASSEMBLY AL nH/turns ² (3)	MAX μ H 100 turns	MIN μ H (4) 100 turns	TEMPERATURE STABILITY(5)
L335-1-CT-F-4	BLUE	CARBONYL C	.15-2.0 MHz	20.0	7.4	74	45	280 ppm/ $^{\circ}$ C
L335-2-CT-F-4	RED	CARBONYL E	25-10 MHz	10.0	6.8	68	45	95 ppm/ $^{\circ}$ C
L335-3-CT-F-4	GREY	CARBONYL HP	.02-1.0 MHz	35.0	7.8	78	46	370 ppm/ $^{\circ}$ C
L335-6-CT-F-4	YELLOW	CARBONYL SF	2.0-50 MHz	8.5	6.1	61	38	35 ppm/ $^{\circ}$ C
L335-7-CT-F-4	WHITE	CARBONYL TH	1.0-20 MHz	9.0	6.4	64	40	30 ppm/ $^{\circ}$ C
L335-10-CT-F-4	BLACK	CARBONYL W	10-100 MHz	6.0	5.7	57	37	150 ppm/ $^{\circ}$ C
L335-17-CT-F-4	LAVENDER	CARBONYL	20-200 MHz	4.0	5.2	52	37	50 ppm/ $^{\circ}$ C

1) The iron powder materials are used in the tuning core and cup core.

2) This represents the frequency range for Q optimization in tuned or resonant circuits. The inductive properties of the material is effective over a considerably wider frequency range.

3) NanoHenries (10^{-9} Henries) per turn squared.4) The minimum inductance is measured in microhenries (10^{-6} Henries) per 100 turns with the tuning core tuned out of the winding area but still a part of the assembly.5) The temperature stability is of the magnetic material, measured in parts per million per degree Celsius ($ppm/^{\circ}C$) on a toroidal core and winding. This is only an indication of the temperature stability for a complete wound assembly.

4 TERMINAL ASSEMBLY	BASE ONLY (6)	WINDING FORM (7)	BASE ASSEMBLY	COLOR CODE	THREADED CORE (8)	CUP CORE	SHIELD CAN
L335-1-CT-F-4	B514	CF115A	B514-w/CF115A	BLUE	TH12-301	C9-3301	CN415CT
L335-2-CT-F-4	B514	CF115A	B514-w/CF115A	RED	TH12-302	C9-3302	CN415CT
L335-3-CT-F-4	B514	CF115A	B514-w/CF115A	GREY	TH12-303	C9-3303	CN415CT
L335-6-CT-F-4	B514	CF115A	B514-w/CF115A	YELLOW	TH12-306	C9-3306	CN415CT
L335-7-CT-F-4	B514	CF115A	B514-w/CF115A	WHITE	TH12-307	C9-3307	CN415CT
L335-10-CT-F-4	B514	CF115A	B514-w/CF115A	BLACK	TH12-310	C9-3310	CN415CT
L335-17-CT-F-4	B514	CF115A	B514-w/CF115A	LAVENDER	TH12-317	C9-3317	CN415CT

5 TERMINAL ASSEMBLY

L335-()-CT-F-5	B515	CF115A	B515-w/CF115A	AS ABOVE	TH12-3()	C9-33()	CN415CT
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L335 WITH NYLON COILFORM AND 4 OR 5 TERMINALS

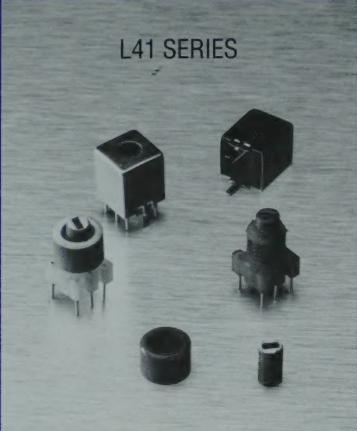
L335-()-CT-NF-4	B514	NF115A	B514-w/NF115A	AS ABOVE	TH12-3()	C9-33()	CN415CT
L335-()-CT-NF-5	B515	NF115A	B515-w/NF115A	AS ABOVE	TH12-3()	C9-33()	CN415CT

6) The base is moulded from thermoset Dialyl Phthalate (DAP). The 4 or 5 terminals available are half hard brass, .024 inches in diameter, tin plated to MIL-STD 202 Method 208 for solderability. Optional base B524 is available with .050 standoffs.

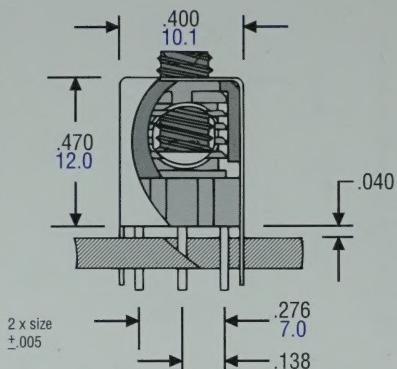
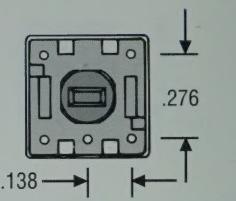
7) The CF115A coil form is a glass reinforced polyester tube with 6-32 internal threads. The NF coil

form is self threading nylon 6/6.

8) The tuning core is 6-32 shallow thread coated with Teflon. Tuning-Tool-A on page 14 is the recommended adjustment tool.



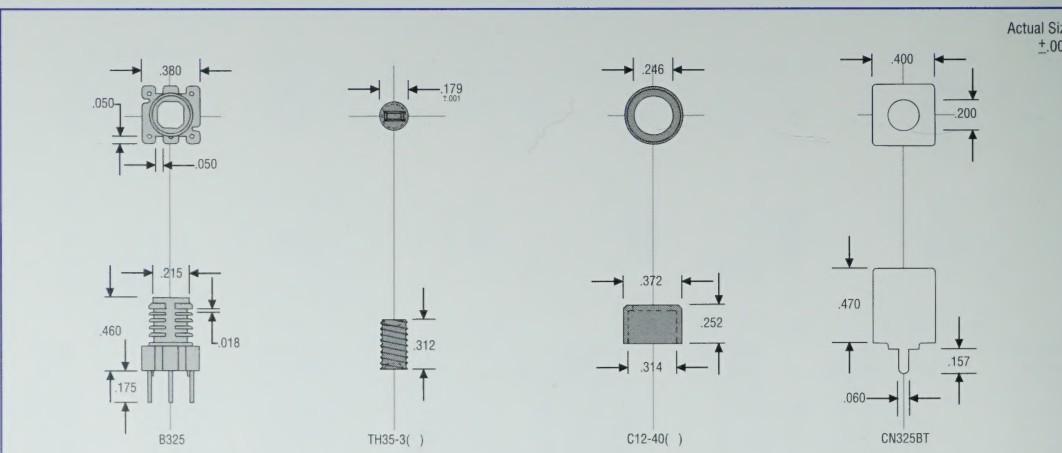
L41 SERIES

The L41 series offers variable inductance, good Q and shielding in a more cost effective 5 terminal assembly. The segregated winding area helps to control capacitive effects. These assemblies are supplied un wound. The winding capacity of this series is on page 6. Typical Q vs Frequency curves are on page 5.

ASSEMBLY PART NO.	COLOR CODE	MAGNETIC MATERIAL(1)	FREQUENCY RANGE(2)	MATERIAL PERMEABILITY	ASSEMBLY Al nH/turns ² (3)	MAX µH 100 turns	MIN µH (4) 100 turns	TEMPERATURE STABILITY(5)
L41-2-BT-F-5	RED	CARBONYL E	.25-10 MHZ	10.0	11.5	115	64	95 ppm/°C
L41-3-BT-F-5	GREY	CARBONYL HP	.02-1.0 MHZ	35.0	15	150	66	370 ppm/°C
L41-3F-BT-F-5	GREY/ORANGE	HP/FERRITE	.01-1.0 MHZ	80.0	19.2	192	74	1000 ppm/°C
L41-6-BT-F-5	YELLOW	CARBONYL SF	.20-50 MHZ	8.5	10.5	105	63	35 ppm/°C
L41-10-BT-F-5	BLACK	CARBONYL W	.10-100 MHZ	6.0	8	80	62	150 ppm/°C
L41-17-BT-F-5	LAVENDER	CARBONYL	.20-200 MHZ	4	6	60	50	50 ppm/°C

1) The iron powder or ferrite materials are used in the tuning core and cup core.
 2) This represents the frequency range for Q optimization in tuned or resonant circuits. The inductive properties of the material is effective over a considerably wider frequency range.
 3) Nanohenries (10^9 Henries) per turn squared.
 4) The minimum inductance is measured in microhenries (10^6 Henries) per 100 turns with the tuning core tuned out of the winding area but still a part of the assembly.
 5) The temperature stability is of the magnetic material, measured in parts per million per degree Celsius (ppm/°C) on a toroidal core and winding. This is only an indication of the temperature stability for a complete wound assembly.

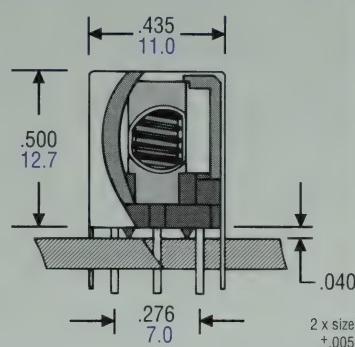
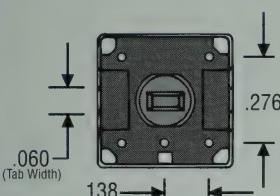


5 TERMINAL ASSEMBLY	BASE ONLY (6)	COLOR CODE	TUNING CORE (7)	CUP CORE	SHIELD CAN
L41-2-BT-F-5	B325	RED	TH35-302	C12-4002	CN325BT
L41-3-BT-F-5	B325	GREY	TH35-303	C12-4003	CN325BT
L41-3F-BT-F-5	B325	GREY/ORANGE	TH35-350	C12-4003	CN325BT
L41-6-BT-F-5	B325	YELLOW	TH35-306	C12-4006	CN325BT
L41-10-BT-F-5	B325	BLACK	TH35-310	C12-4010	CN325BT
L41-17-BT-F-5	B325	LAVENDER	TH35-317	C12-4017	CN325BT

6) The base and self threading segregated coil form are one piece, moulded from nylon 6/6 and will require careful heat management. The 5 terminals available are half hard brass, .025 inches in diameter, tin plated to MIL-STD 202 Method 208 for solderability.

7) The tuning core is 10-32 shallow thread coated with Teflon. Tuning-Tool-A on page 14 is the recommended adjustment tool.

Inches/mm



The L43 series offers superior inductance, Q performance and shielding in a variable 5 terminal assembly. The components are designed for excellent durability and stability over time and temperature. These assemblies are supplied unwound. The winding capacity of this series is on page 6. Typical Q vs Frequency curves are on page 5.

ASSEMBLY PART NO.	COLOR CODE	MAGNETIC MATERIAL(1)	FREQUENCY RANGE(2)	MATERIAL PERMEABILITY	ASSEMBLY AL nH/turns ² (3)	MAX µH 100 turns	MIN µH (4) 100 turns	TEMPERATURE STABILITY(5)
L43-1-CT-F-5	BLUE	CARBONYL C	.15-2.0 MHz	20.0	11.5	115	54	280 ppm/°C
L43-2-CT-F-5	RED	CARBONYL E	.25-10 MHz	10.0	9.8	98	48	95 ppm/°C
L43-3-CT-F-5	GREY	CARBONYL HP	.02-1.0 MHz	35.0	13.3	133	60	370 ppm/°C
L43-6-CT-F-5	YELLOW	CARBONYL SF	2.0-50 MHz	8.5	8.5	85	44	35 ppm/°C
L43-7-CT-F-5	WHITE	CARBONYL TH	1.0-20 MHz	9.0	9.3	93	46	30 ppm/°C
L43-10-CT-F-5	BLACK	CARBONYL W	10-100 MHz	6.0	7.2	72	43	150 ppm/°C
L43-17-CT-F-5	LAVENDER	CARBONYL	20-200 MHz	4.0	5.6	56	43	50 ppm/°C
L43-50-CT-F-5	ORANGE	FERRITE 61	.01-.500 MHz	125.0	19	190	70	1500 ppm/°C

1) The iron powder or ferrite materials are used in the tuning core and cup core.

2) This represents the frequency range for Q optimization in tuned or resonant circuits. The inductive properties of the material is effective over a considerably wider frequency range.

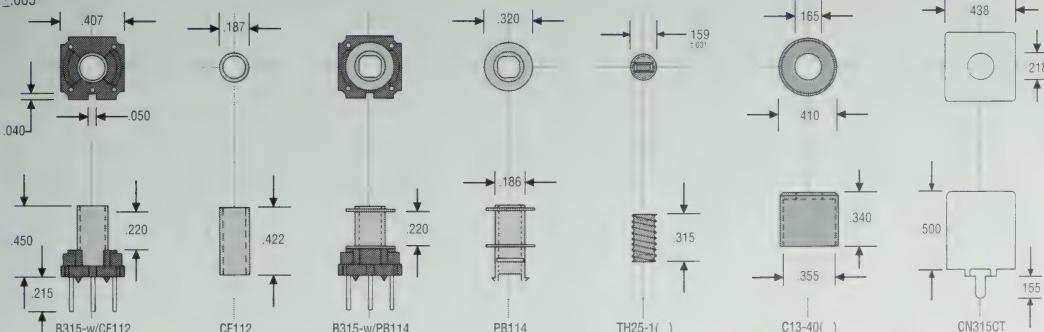
3) NanoHenries (10^9 Henries) per turn squared.

4) The minimum inductance is measured in microhenries (10^{-6} Henries) per 100 turns with the tuning

core tuned out of the winding area but still a part of the assembly.

5) The temperature stability is of the magnetic material, measured in parts per million per degree Celsius (ppm/°C) on a toroidal core and winding. This is only an indication of the temperature stability for a complete wound assembly.

Actual Size
±.005



5 TERMINAL ASSEMBLY	BASE ONLY (6)	COIL FORM (7)	BASE ASSEMBLY	COLOR CODE	TUNNING CORE (8)	CUP CORE	SHIELD CAN
L43-1-CT-F-5	B315	CF112	B315-w/CF112	BLUE	TH25-101	C13-4001	CN315CT
L43-2-CT-F-5	B315	CF112	B315-w/CF112	RED	TH25-102	C13-4002	CN315CT
L43-3-CT-F-5	B315	CF112	B315-w/CF112	GREY	TH25-103	C13-4003	CN315CT
L43-6-CT-F-5	B315	CF112	B315-w/CF112	YELLOW	TH25-106	C13-4006	CN315CT
L43-7-CT-F-5	B315	CF112	B315-w/CF112	WHITE	TH25-107	C13-4007	CN315CT
L43-10-CT-F-5	B315	CF112	B315-w/CF112	BLACK	TH25-110	C13-4010	CN315CT
L43-17-CT-F-5	B315	CF112	B315-w/CF112	LAVENDER	TH25-117	C13-4017	CN315CT
L43-50-CT-F-5	B315	CF112	B315-w/CF112	ORANGE	TH25-150	C13-4050	CN315CT

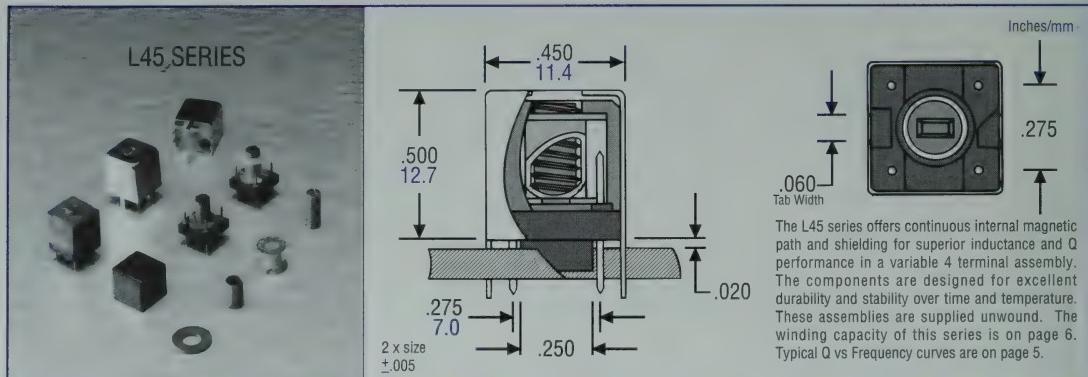
L43 WITH SNAP IN NYLON BOBBIN

L43-()-CT-B-5	B315	PB114	B315-W/PB114	AS ABOVE	TH25-1()	C13-40()	CN315CT
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6) The base is moulded from thermoset Diallyl Phthalate (DAP). The 5 terminals available are half hard copper, .025 inches in diameter, tin plated to MIL-STD 202 Method 208 for solderability.
7) The CF112 coil form is a glass reinforced polyester tube with 8-32 internal threads. The PB114

snap in bobbin is self threading nylon 6/6

8) The tuning core is 8-32 shallow thread coated with Teflon. Tuning-Tool-A on page 14 is the recommended adjustment tool.



The L45 series offers continuous internal magnetic path and shielding for superior inductance and Q performance in a variable 4 terminal assembly. The components are designed for excellent durability and stability over time and temperature. These assemblies are supplied unwound. The winding capacity of this series is on page 6. Typical Q vs Frequency curves are on page 5.

ASSEMBLY PART NO.	COLOR CODE	MAGNETIC MATERIAL(1)	FREQUENCY RANGE(2)	MATERIAL PERMEABILITY	ASSEMBLY AL nH/turns ² (3)	MAX μ H 100 turns	MIN uH (4) 100 turns	TEMPERATURE STABILITY(5)
L45-1-PCT-B-4	BLUE	CARBONYL C	.15-2.0 MHz	20.0	17.5	175	58	280 ppm/C
L45-2-PCT-B-4	RED	CARBONYL E	.25-10 MHz	10.0	12.5	125	52	95 ppm/C
L45-3-PCT-B-4	GREY	CARBONYL HP	.02-1.0 MHz	35.0	20.4	204	64	370 ppm/C
L45-3F-PCT-B-4	GREY/ORANGE	HP/FERRITE	.01-1.0 MHz	80.0	31.5	315	79	1000 ppm/C
L45-6-PCT-B-4	YELLOW	CARBONYL SF	2.0-50 MHz	8.5	11.5	115	47	35 ppm/C
L45-7-PCT-B-4	WHITE	CARBONYL TH	1.0-20 MHz	9.0	12	120	48	30 ppm/C
L45-10-PCT-B-4	BLACK	CARBONYL W	10-100 MHz	6.0	10	100	46	150 ppm/C
L45-17-PCT-B-4	LAVENDER	CARBONYL	20-200 MHz	4.0	6.7	67	45	50 ppm/C

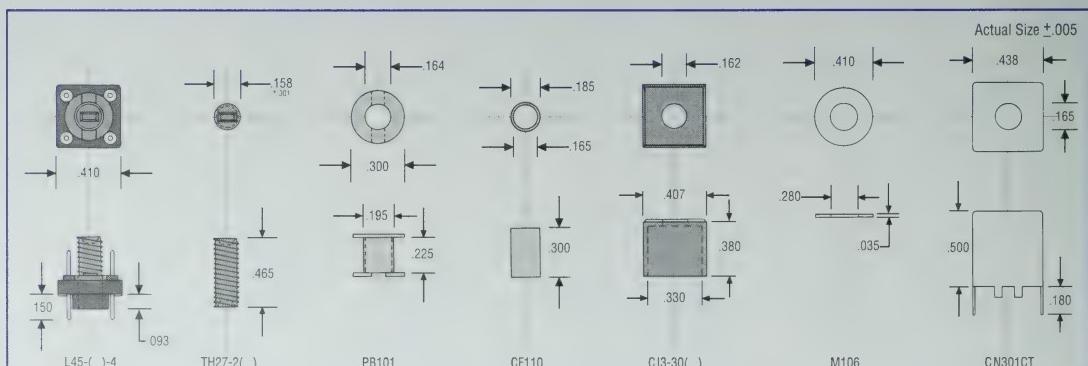
1) The iron powder or ferrite materials are used in a portion of the base, the tuning core and cup core. Mix 3F is a combination of a ferrite tuning core and an iron powder cup core.

2) This represents the frequency range for Q optimization in tuned or resonant circuits. The inductive properties of the material is effective over a considerably wider frequency range.

3) Nanohenries (10^{-9} Henries) per turn squared.

4) The minimum inductance is measured in microhenries (10^{-6} Henries) per 100 turns with the tuning core tuned out of the winding area but still a part of the assembly.

5) The temperature stability is of the magnetic material, measured in parts per million per degree Celsius (ppm/C) on a toroidal core and winding. This is only an indication of the temperature stability for a complete wound assembly.



4 TERMINAL ASSEMBLY	BASE ONLY (6)	TUNING CORE (7)	BASE ASSEMBLY	COLOR CODE	WINDING FORM (8)	CUP CORE	RUBBER PAD (9)	SHIELD CAN
L45-1-PCT-B-4	B300-1	TH27-201	L45-1-4	BLUE	PB101	C13-3001	M106	CN301CT
L45-2-PCT-B-4	B300-2	TH27-202	L45-2-4	RED	PB101	C13-3002	M106	CN301CT
L45-3-PCT-B-4	B300-3	TH27-203	L45-3-4	GREY	PB101	C13-3003	M106	CN301CT
L45-3F-PCT-B-4	B300-3	TH27-268	L45-3F-4	GREY/ORANGE	PB101	C13-3003	M106	CN301CT
L45-6-PCT-B-4	B300-6	TH27-206	L45-6-4	YELLOW	PB101	C13-3006	M106	CN301CT
L45-7-PCT-B-4	B300-7	TH27-207	L45-7-4	WHITE	PB101	C13-3007	M106	CN301CT
L45-10-PCT-B-4	B300-10	TH27-210	L45-10-4	BLACK	PB101	C13-3010	M106	CN301CT
L45-17-PCT-B-4	B300-17	TH27-217	L45-17-4	LAVENDER	PB101	C13-3017	M106	CN301CT

4 TERMINAL ASSEMBLY WITH PAPER COIL FORM

L4501(-)-PCT-F-4	B300- ()	TH27-2()	L4501(-)-4	AS ABOVE	CF110	C13-30()	M106	CN301CT
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6) The base is moulded from thermoset Dialyl Phthalate (DAP). The 4 terminals available are half hard glass .024 inches in diameter tin plated to MIL-STD 202 Method 208 for solderability.

7) The tuning core is 8-40 shallow thread coated with Teflon. Tuning-Tool-A on page 14 is the recommended adjustment tool.

8) The winding bobbin PB101 is moulded nylon 6/6. CF110 is a phenolic impregnated paper tube.

9) The anti-vibration silicon rubber pad M106 is optional. It will be excluded from assemblies when the "P" is excluded from the assembly number. (ie. L45-2-CT-B-4)

Dimensions in Inches/mm

The L57 series offers a continuous internal magnetic path and shielding for superior inductance and Q performance in a variable assembly with 4 or 6 terminals. The components are designed for excellent durability and stability over time and temperature. These assemblies are supplied unwound. The winding capacity of this series is on page 6. Typical Q vs Frequency curves are on page 5.

ASSEMBLY PART NO.	COLOR CODE	MAGNETIC MATERIAL (1)	FREQUENCY RANGE (2)	MATERIAL PERMEABILITY	ASSEMBLY AL nH/turns ² (3)	MAX µH 100 turns	MIN µH (4) 100 turns	TEMPERATURE STABILITY (5)
L57-1-PCT-B-4	BLUE	CARBONYL C	.15-2.0 Mhz	20.0	18.5	185	60	280 ppm/C
L57-2-PCT-B-4	RED	CARBONYL E	.25-10 Mhz	10.0	13.0	130	54	95 ppm/C
L57-3-PCT-B-4	GREY	CARBONYL HP	.02-1.0 Mhz	35.0	21.5	215	70	370 ppm/C
L57-3F-PCT-B-4	GREY/ORANGE	HP/FERRITE	.01-1.0 Mhz	80.0	32.0	320	81	1000 ppm/C
L57-6-PCT-B-4	YELLOW	CARBONYL SF	10-50 Mhz	8.5	12.0	120	51	35 ppm/C
L57-7-PCT-B-4	WHITE	CARBONYL TH	1.0-20 Mhz	9.0	12.5	125	52	30 ppm/C
L57-10-PCT-B-4	BLACK	CARBONYL W	10-100 Mhz	6.0	10.5	105	50	150 ppm/C
L57-17-PCT-B-4	LAVENDER	CARBONYL	20-200 Mhz	4.0	7.0	70	50	50 ppm/C

1) The iron powder or ferrite materials are used in a portion of the base, the tuning core and cup core. Mix 3F is a combination of a ferrite tuning core and an iron powder cup core.
 2) This represents the frequency range for Q optimization in tuned or resonant circuits. The inductive properties of the material is effective over a considerably wider frequency range.
 3) Nanohenries (10^9 Henries) per turn squared.
 4) The minimum inductance is measured in microhenries (10^{-6} Henries) per 100 turns with the tuning core tuned out of the winding area but still a part of the assembly.
 5) The temperature stability is of the magnetic material, measured in parts per million per degree Celsius (ppm/C) on a toroidal core and winding. This is only an indication of the temperature stability for a complete wound assembly.

4 TERMINAL ASSEMBLY	BASE ONLY (6)	TUNING CORE (7)	BASE ASSEMBLY	COLOR CODE	WINDING FORM (8)	CUP CORE	RUBBER PAD (9)	SHIELD CAN
L57-1-PCT-B-4	B202-1	TH27-201	L57-1-4	BLUE	PB100	C17-2101	M107	CN101CT
L57-2-PCT-B-4	B202-2	TH27-202	L57-2-4	RED	PB100	C17-2102	M107	CN101CT
L57-3-PCT-B-4	B202-3	TH27-203	L57-3-4	GREY	PB100	C17-2103	M107	CN101CT
L57-3F-PCT-B-4	B202-3	TH27-268	L57-3F-4	GREY/ORANGE	PB100	C17-2103	M107	CN101CT
L57-6-PCT-B-4	B202-6	TH27-206	L57-6-4	YELLOW	PB100	C17-2106	M107	CN101CT
L57-7-PCT-B-4	B202-7	TH27-207	L57-7-4	WHITE	PB100	C17-2107	M107	CN101CT
L57-10-PCT-B-4	B202-10	TH27-210	L57-10-4	BLACK	PB100	C17-2110	M107	CN101CT
L57-17-PCT-B-4	B202-17	TH27-217	L57-17-4	LAVENDER	PB100	C17-2117	M107	CN101CT

4 TERMINAL ASSEMBLY WITH PAPER COIL FORM

L5701-()-PCT-F-4	B202-()	TH27-2()	L5701-()-4	AS ABOVE	CF110	C17-21()	M107	CN101CT
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6 TERMINAL ASSEMBLY

L57-()-PCT-B-6	B200-()	TH27-2()	L57-()-6	AS ABOVE	PB100	C17-21()	M107	CN101CT
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6 TERMINAL ASSEMBLY WITH PAPER COIL FORM

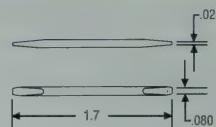
L5701-()-PCT-B-6	B200-()	TH27-2()	L5701-()-6	AS ABOVE	CF110	C17-21()	M107	CN101CT
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6) The base is moulded from thermoset Dialyl Phthalate (DAP). The 4 or 6 terminals available are half hard brass .032 inches in diameter, tin plated to MIL-STD 202 Method 208 for solderability. In 1991 the terminal diameters will be revised to match the L45 diameter of .024 inches.
 7) The tuning core is 8-40 shallow thread coated with Teflon. Tuning-Tool-A on page 14 is the recommended adjustment tool.
 8) The winding bobbin PB100 is moulded nylon 6/6. CF110 is a phenolic impregnated paper tube.
 9) The anti-vibration silicon rubber pad M107 is optional. It will be excluded from assemblies when the "P" is excluded from the assembly number. (ie: L57-2-CT-B-4)

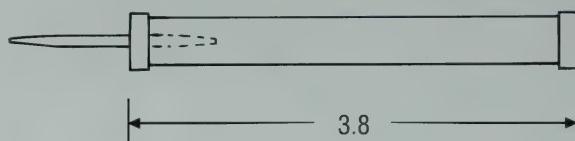
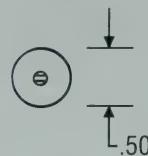
TUNING TOOL A

The drive slots in iron powder tuning cores can be broken when tuned with a poor fitting tool. Tuning Tool A or an equivalent is recommended for adjustments to the tuning core in all of the Shielded Coil Form series. The tool tip is ceramic with driver blades on both ends while the tool handle is a fiber tube. Ceramic tips can be purchased separately.

Tool Tip Only
Part No. M104-1



Not To Scale

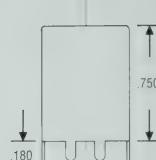
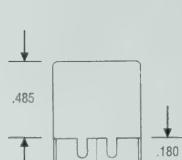
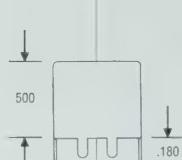
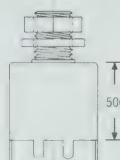
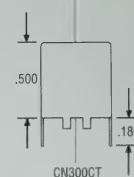
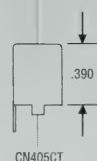
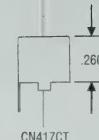
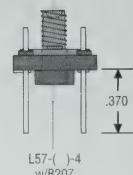
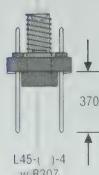
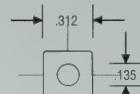
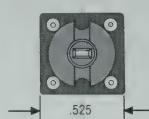
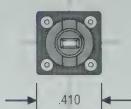


Not To Scale

ACCESSORIES

The following items are available as accessories to the Shielded Coil Form product line.

Actual Size
 $\pm .005$



CN402CT
i-28 Bushing
Nut & Washer

CN102CT
i-28 Bushing
Nut & Washer

CN100CT

CN111CT

CN203CT

Dear ECN Reader,

Thank you for your interest in our Shielded Coil Form Catalog that we showcased in ECN's Literature News.

The continuing success of this family of products has been significant to our growth. High quality, high Q and good temperature stability are as important now as it was 25 years ago when this product line was started. I hope you find this new catalog both illustrative and informative.

In addition we have included a line card showing our other product lines:

Component and Toroid Mounts; plastic moulded mounting devices and headers for through hole and surface mount applications.

Fair-Rite Product Ferrites; Lodestone Pacific is the Southern California Representative for Fair-Rite Products of Wallkill N.Y. We also stock and distribute these ferrites world wide from our Anaheim warehouse.

Please call or Fax if you need additional literature or samples from any of our product lines.

Thanks again and good luck with your projects.

To: Interconnection Products (IPI) Customers
Regarding: Cambion variable coil form availability.

INTRODUCTION

Lodestone Pacific is the manufacturer of a family of SHIELDED COIL FORMS used in making variable inductors for RF filter inductors, oscillators and transformers. These assemblies have been used in "FISHFINDERS TO SIDEWINDERS" for over 25 years. Our customers are OEM's and Coilwinders who do their own winding, so these assemblies are always sold unwound.

HIGH Q AND HIGH QUALITY

Known for their high quality and high Q, Lodestone Pacific's Shielded Coil Forms are ideal for Military, Aerospace and Specialty Electronic applications. Using durable and stable materials, these assemblies adhere to the Quality control guidelines found in MIL-I-45208A, ISO 9000 and MIL-STD-2000.

CAMBION EQUIVALENTS

In light of the closing of Interconnection Products (IPI/Cambion) in Santa Ana California, Lodestone Pacific has the opportunity to provide equivalents to many hard to find Cambion Shielded Coil Forms. We have either direct or functional equivalents to the following Cambion assemblies and their sub-components.

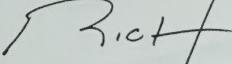
533-3651	534-3602	534-3619	534-4460
533-3652	534-3603	534-3623	534-4461
533-3742	534-3613	534-3624	534-4723
533-3743	534-3614	534-3706	534-4724
533-4462	534-3618	534-3707	

We can also provide the hardware only for Cambion's wound inductor numbers 556-7105, 558-7107 and 558-1194. We can also recommend several sources familiar with winding these coil forms.

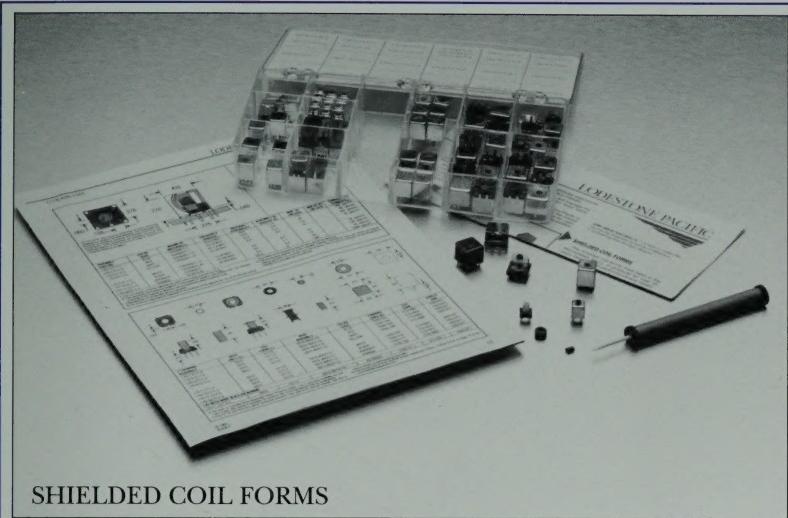
YOUR CUSTOMERS

Lodestone Pacific can provide you, or your customers, with catalogs, technical support and samples. Our standard lead time is 4 weeks, however smaller orders up to several hundred are typically shipped in two weeks.

I hope to be of service,



Richard Barden
Managing Director
September 18, 1991

**SHIELDED COIL FORMS**

L31-1-CT-B-4	L33-1-CT-F-5	L335-1-CT-F-4	L41-2-BT-F-5	L43-1-CT-F-5	L45-1-PCT-B-4	L57-1-PCT-B-6
L31-2-CT-B-4	L33-2-CT-F-4	L335-2-CT-F-5	L41-3-BT-F-5	L43-2-CT-F-5	L4501-2-PCT-B-4	L57-2-PCT-B-4
L31-3-CT-B-5	L33-3-CT-F-4	L335-3-CT-F-4	L41-3F-BT-F-5	L43-3-CT-B-5	L45-3-PCT-B-4	L57-3-PCT-B-4
L31-6-CT-B-4	L33-6-CT-F-4	L335-6-CT-F-4	L41-6-BT-F-5	L43-6-CT-B-5	L45-3F-PCT-B-4	L57-3F-PCT-B-6
L31-7-CT-B-4	L33-7-CT-F-5	L335-6-CT-F-5	L41-10-BT-F-5	L43-7-CT-F-5	L45-6-PCT-B-4	L57-6-PCT-B-4
L31-10-CT-B-5	L33-10-CT-F-4	L335-7-CT-NF-4	L41-17-BT-F-5	L43-10-CT-F-5	L4501-7-PCT-B-4	L5701-7-PCT-B-6
L31-17-CT-B-4	L33-17-CT-F-4	L335-10-CT-F-4		L43-17-CT-F-5	L45-10-PCT-B-4	L57-10-PCT-B-4
L31-50-CT-B-4	L33-50-CT-F-4	L335-17-CT-F-4		L43-50-CT-F-5	L45-17-PCT-B-4	L57-17-PCT-B-4

Compliments of
Eva, Margarete, Pam and Alice

**COMPONENT AND TOROID MOUNTS****ENGINEERING KIT NO. 2****Engineering Kit No. 2**

Engineering Kit No. 2 offers a selection of complete Shielded Coil Form assemblies for design and prototype of RF Filter Inductors, Oscillators and Transformers for narrow and broad band applications. Ideal for engineering labs, this kit allows the designer to determine the optimum SCF configuration to maximum Q and performance from 100 KHz to 200 MHz.

Each Engineering Kit No. 2 includes a Lodestone Pacific Shielded Coil Form catalog with applications information, and a tuning tool.

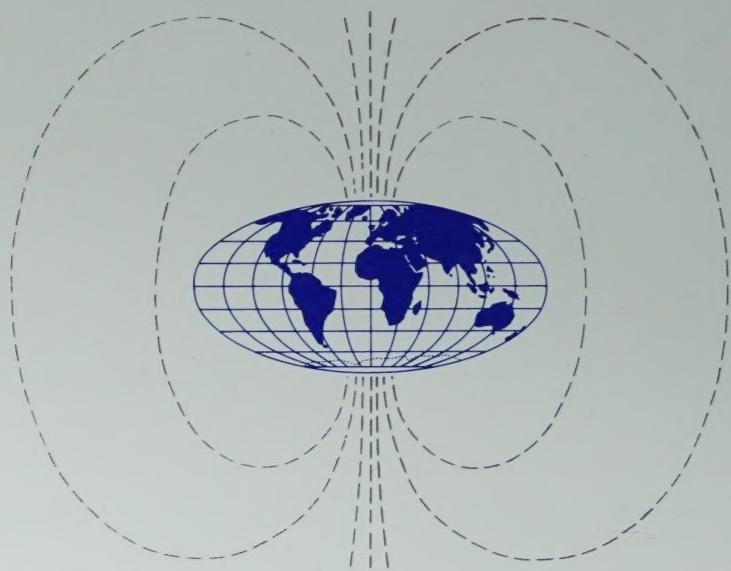
The following SCF assemblies are included in Engineering Kit No. 2.

ENGINEERING KIT NO. 5

Engineering Kit No. 5 supports the Lodestone Pacific Component and Toroid mount family of products. This Kit offers a wide selection of plastic molded toroid and component mounts in both thermoset and thermoplastics, all rated at UL94-VO.

Ideally suited for engineering labs, the included examples offer solutions to vertical, horizontal, through hole and surface mount applications with a variety of terminal configurations that meet MIL-STD-202, Method 208 for Solderability.

For a catalog on readily available component and toroid mounts contact Lodeston Pacific.



FINEST IN THE FIELD